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DISEASES OF THE NERVOUS SYSTEM

A PRACTICAL JOURNAL ON PSYCHIATRY AND NEUROLOGY

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DISEASES of the NERVOUS SYSTEM

(PUBLISHED MONTHLY)

A PRACTICAL JOURNAL ON PSYCHIATRY AND NEUROLOGY

Morale Aspect of Military Mental Hygiene

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Elsewhere[1] we described a neuropsychiatric program for a replacement training center. In that article we presented in detail the operation of the various phases of such a program. It was brought out that there are essentially two aspects of a military psychiatric plan: (1) the detection and removal from the service of the actual or potential neuropsychiatric misfit; (2) a program of military mental hygiene in order to prevent the development of serious neuropsychiatric disorders.

We wish now to deal with this latter phase of the neuropsychiatric program.

It is commonplace knowledge that war produces drastic and at times dramatic changes in the lives of both civilians and soldiers. There is the constant threat of family separation. For the soldier and for many workers, this is an actuality. There is a curtailment, and in many instances a complete deprivation, of former luxuries and pleasures. There are serious economic changes. While it is true that many suddenly find themselves in possession of a greater income than that which they enjoyed during peace time, it is also true that for the millions of men in the armed services as well as for thousands of civilians, who for one reason or another cannot participate in war industries, there is a serious financial problem. Food is rationed and many foods are no longer available. There is always the constant threat, if not the actual fact, of loved ones lost as a result of combat. There is a constantly mounting emotional tension resulting from the varying fortunes of war, and particularly from rumors deliberately disseminated by enemy agents in order to induce fear, and calculated to spread demoralization, defeatism, and confusion.

Millions of service men have either interrupted their studies at school or have given up a trade or profession for which they spent many years in preparation. The soldier finds that he has lost civilian individuality and is submitting to a new form of discipline. His new "occupation" may seem to him, particularly at first, to be full of innumerable and irksome "restrictions" and "rules and regulations." He is deprived of feminine companionship or, at least, he has left his girl friend or wife behind him. He is caught in a constant situation wherein the demands of war ever conflict with most of his innate and acquired drives.

Morale

The Army psychiatrist knows that it is not enough to find the already existing neuropsychiatric misfit. He knows that given sufficient emotional stress, personality disturbances may appear in anyone. He recognizes, however, that the vast majority of soldiers aided by some kind of philosophical outlook manage to adapt themselves satisfactorily. He is aware that the development and culti-

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vation of correct mental attitudes toward the war is a very important part of his job.

After some eight months of almost daily contact with thousands upon thousands of trainees, during which time we examined almost 2000 soldiers in our clinic, we are satisfied that the most fundamental and effective philosophical basis is that which is built upon a thoroughly understood democratic ideology.

To achieve this objective the Army has employed both lectures and motion picture films. The psychiatrist, however, contributes his part to morale through talks with individual soldiers in the neuropsychiatric clinic or before groups of soldiers and officers called together especially for such a purpose.

While recreational activities are conducive to good morale, these, in themselves, are but contributory. Morale is a state of mind which enables a soldier or civilian or millions of such people to carry on and persevere in their missions in spite of the most adverse conditions, disheartening developments, defeatist rumors, fatigue, hunger, great physical discomforts, and even the threat of actual death. High morale springs from a full knowledge of the meaning and significance of this war. It is a state of mind which can come to an individual only when he fully understands the very fundamental issues at hand—only when he feels that he is an integral part of everything that he is fighting for—only when there has been aroused in him a social consciousness, the like of which he has never felt before.

The soldier must know what this thing Fascism or Nazism is. He must understand it as being a political, social, and economic form of society wherein by virtue of a merger which has been accomplished between certain powerful financial interests and a military machine, the entire nation is under the dictatorship of this oligarchy. Individuality and freedom are suppressed "in the interests of the state" which happens to be none other than the dictating oligarchy. Since so radical a change in a form of government is not very easily accomplished, the transition to Fascism is, at first, made easier by demagogic political agitation of the kind which is described as "We are all things to all men." To gain the backing of powerful industrialists whom Vice-President Wallace[2] described as wishing "to change the sign posts and lure the people back into slavery," a form of society is offered which will protect their interests; to the middle and working classes, liberal phrases are demagogically mouthed; to facilitate the accomplishment of their objective, disunity is created by playing political groups against each other, religious groups against each other, social and economic groups against each other. A confused and disunited people can offer no effective resistance to the seizure of power by this newly-merged oligarchy.

The soldier must also understand that Democracy, simply stated, is a form of society wherein government rests with the majority of the people. There is no better definition for it than that expressed by Lincoln—"A government of the people, by the people, and for the people." It would be useless to deny that the implications and full development of democracy have ever been reached in our country. However, it is our job to see that the issues of the war are so personalized in the mind of each soldier that he is fully conscious of his own stake in the world for which we are fighting. The terms, "Political Democracy," "Social Democracy," and "Economic Democracy" are not empty phrases. They are inherent in our very form of government and represent fundamental objectives for which not only we Americans but all of the Allies are fighting.[3,4,5,6,7,8,9]

Enemy Propaganda

The soldier must not only fully understand the meaning of Fascism and Democracy but, for his own correct thinking, he must be taught how to detect the various forms of enemy propaganda. He must know that the enemy is fighting him on the psychological front with the same deadly earnestness that it does on the battlefront with tanks and planes, and bombs and bullets. He must completely understand Hitler's statement: "Mental confusion, indecisiveness, panic—these are our weapons!" And another Hitler remark: "America is permanently on the brink of revolution. It will be a simple matter for me to produce revolts and unrest in the United States so that these gentry will have their hands full."[10]

We, of course, have not been exactly unaware of the Nazi propaganda warfare. In his Fireside Chat on December 29, 1940, President Roosevelt summed up the situation: "Let

us no longer blind ourselves to the undeniable fact that the evil forces which have crushed and undermined and corrupted so many others are already within our own gates. Your government knows much about them and every day is ferreting them out.

"Their secret emissaries are active in our own and in neighboring countries. They seek to stir up suspicion and dissension, to cause internal strife. They try to turn capital against labor, and vice versa. They try to reawaken long-slumbering racial and religious enmities which should have no place in this country. They are active in every group that promotes intolerance. . . . These trouble-breeders have but one purpose. It is to divide our people into hostile groups and to destroy our unity and shatter our will to defend ourselves."

The Office of War Information[11] aptly points out: "War has only intensified the barrage of propaganda. Day after day, the Axis short-waves pour falsehoods into the United States. Hitler communicates with his agents here by his short-wave broadcasts. Listening to the programs, they learn the current propaganda line and immediately act upon it, spreading rumors that will leave the impression on American minds that Hitler wishes to leave."

A soldier, then, must be taught to recognize at once the variety of enemy propaganda rumors which are directed against him daily:

a) *Disunity Rumors, Internationally.* (Propaganda intended to create disunity among the allies: Anti-British, Anti-Russian, Anti-Chinese, etc.)

b) *Disunity Rumors, Nationally.* (Propaganda intended to revive and fan the flames of old hatreds, prejudices, and suspicions such as Anti-Semitism, Anti-Catholicism, Anti-Negro, Anti-Capital, Anti-Labor, etc.)

c) *Defeatist Rumors.* (Propaganda calculated to demoralize both soldier and civilian by destroying his faith in our military leadership, in our military equipment, in our national leadership; to prepare us to become overwhelmed by enemy threats such as "The worst is yet to come!—This is but the beginning!"; to prepare the groundwork for the "It is no use!—All is lost!" state of mind.)

d) *Narcotic Rumors.* (Propaganda intended to lull us into smug complacency; to keep alive the "business as usual—vacation as usual" suicidal frame of mind; to have us believe that the enemy is falling apart of its own weight—that we may now relax our efforts!)

e) *Peace Offensive.* (A revival of the Munich Program of "peace at any price.") Our President, our Vice-President—all of our responsible leaders have said that there cannot be a peace until Fascism is utterly and completely destroyed! Any premature attempt at peace is to betray us into the hands of Hitler![12]

"The experience of the past two years has proven beyond doubt that no nation can appease the Nazis. . . . We know now that a nation can have peace with the Nazis only at the price of total surrender," warned President Roosevelt on December 29, 1940. And a year later, on December 10, 1941, our President said: "I repeat that the United States can accept no result save victory, final and complete. . . . The sources of international brutality, wherever they evist, must be absolutely and finally broken."

Hitler, in one of his few truthful utterances, stated: "These are two worlds. I grant that one of the two must succumb. Yes, one or the other." And this is perhaps the only statement of his with which all of our national leaders are agreed. Said Vice-President Wallace, "There can be no half measures. . . . The will of the American people is for complete victory. No compromise with Satan is possible. We shall not rest until all victims under the Nazi yoke are freed. We shall fight for a complete peace as well as a complete victory."[2] And, Under-Secretary of State Sumner Welles: "We must utterly and finally crush the evil men and the iniquitous systems which they have devised, that are today menacing our existence, and that of free men and women throughout the earth. There can be no compromise. There can be no respite until the victory is won."[5]

f) *Pro-Fascist Propaganda.* While all of the above five types of propaganda must, of necessity, be demagogic in nature, there is still a direct pro-Fascist propaganda directed toward those elements within each country of the Allied nations who have always been ideologically Fascist, have not given up their views or, at most, have wavered a bit since the war began. Such propaganda is directed to them in order to bolster those who may waver as well as to give directional leads for the active enemy agents within each Allied nation.

Once the soldier knows how to detect enemy propaganda, he is taught how to counteract enemy propaganda. He must know that whenever a rumor or story is presented to him he must immediately analyze it and label it for the type of propaganda that it is. After having exposed it he must demand that it stop at once. He is told: Point out to the individual who has brought you the story that such stories are deliberately spread by conscious enemy agents and, wittingly or unwittingly, he is serving Hitler. Any attempt on the part of the individual to "excuse" himself because he is bringing this to you "confidentially," or to "laugh it off" by assuring you that you are being "overly cautious" should immediately be exposed as the usual technique of a Nazi agent when he is caught disseminating rumors. In a life and death struggle, there is no room for levity, nor for carelessness—your rumor spreader must be met seriously and emphatically. If he persists, notify your commanding officer.

The Army psychiatrist, when called upon to speak before civilian groups, addresses such organizations almost exactly as he does the soldier. To civilians, in addition, he points out that everyone must be actively engaged in some phase of the war effort. When one's occupation is not directly connected with some war industry, activity in one or more of the various volunteer programs is essential. (Civilian Defense, Volunteer Nurse's Aid, other medical work, Red Cross, Social Welfare Service agencies; day nurseries or other child-care organizations, recreational work, consumer programs, various campaigns, etc.)

The civilian, whether he is working in war industry or not, is urged to continually keep alive his knowledge and his interest in the philosophical, political, social, and economic issues at stake in this war by attending discussion groups and open forum meetings sponsored by civic organizations in his community, and through the press and the radio.

Physical hygiene, both for the soldier and the civilian, is also stressed. It is obvious that mental health and the success of the war effort is dependent upon good physical health. Both soldier and civilian are urged to get adequate sleep, follow adequate and properly balanced diets, get sufficient relaxation, exercise, etc. The civilian is particularly urged to adopt the slogan: I will relax and play *after* doing my share in the war effort. *but not instead of it!*

Conclusion

It has long been recognized that a psychiatrist must know more than just the human body. He must not only be a good physician, and particularly a good neurologist, but also he must know the world about him—its manners, customs, conflicts, philosophies, economic and political systems and struggles; its past and present history. In short, he must have deep roots in old and contemporary cultures. A neuropsychiatrist who is not at the same time a sociologist is a failure. If these requirements are true of psychiatry in peace times, it is doubly true during times of war.

An Army psychiatrist who deals with psychoneurotic soldiers in his clinic inevitably finds that many have developed their neurotic disturbances precisely because they have been victimized for months or years prior to their induction by a variety of garbled and distorted notions regarding the issues of this war. Certainly our own experience of eight months, during which period a little less than 2000 soldiers were seen in our clinic, has taught us that many, far too many, have come into the Army with most undemocratic, un-American points of view and, hence, have no incentive to submerge their personal problems and differences to the great task of winning the war which lies ahead of them. This is not surprising, since for years our enemies have been planting their seeds of hatred and fanning the flames of prejudice and suspicion in order to undermine and divide us. We have been guilty of gross negligence in failing to effectively counteract Hitler propaganda from abroad, let alone that of our own native brand of Fascists.[13]

As we have indicated earlier, the Army is fully aware of this problem and is trying through its series of orientation lectures and motion picture films to give our soldiers a clear and accurate perspective. Unfortunately, however, for many of the boys the lectures and movies are not sufficient. It is up to the psychiatrist, then, to "carry through" in his talks with the individual soldier in the clinic. It goes without saying that the psychiatrist himself must keep abreast of all developments, both nationally and internationally, in

order that he may know at all times how such factors may possibly affect the soldier. He must ever be alert, in addition, to demoralizing factors in his camp and advise the proper authorities accordingly. To effectively carry out his job, he works in close relationship with the various unit commanders, chaplains, personnel adjutants, classification officers, personnel consultants, and other medical officers. In addition, he delivers talks from time to time to officers and soldiers.

In conclusion, he has for his thesis this belief: The more profoundly we understand and hate the curse of Fascism, the more deeply we appreciate Democracy and its promise for humanity, the more alert we are to detect and combat enemy propaganda, the more actively we participate in one or another phase of the war activity, the more we submerge our personal problems to that of the great problem of winning the war, the more physically fit we remain—that much more certain are we to go through this war without the development of any serious mental illness, and that much greater is our personal contribution to the winning of the war.

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The Clinical Value of Electroencephalography*

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THEODORE J. CASE, M.D.,*** *and* A. EARL WALKER, M.D.****
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Introduction

Many reports have appeared emphasizing the diagnostic significance of electroencephalography but its importance in comparison with that of other diagnostic neurological aids has not been assessed. For that reason a survey has been made at the University of Chicago Clinics of the cases that have had electroencephalography and other diagnostic procedures to determine their relative value. Although abnormalities have been found in the cerebral electrical potentials in many conditions, this report will deal only with the value of electroencephalography in convulsive states and intracranial tumor. Since the two most common diagnostic procedures carried out on such cases are the neurological and roentgenological examinations, they have been chosen as a basis for comparison with the electroencephalographic findings.

Methods

Technique—The electroencephalograms were made on a three-channel ink-writing oscillograph. Routinely one input terminal of each amplifier was taken and all connected to a common lead, which was attached by a small metal disc to the vertex of the scalp. This lead was also grounded. Similar metal plates were attached to the scalp in the frontal, parietal and occipital regions of both sides. In rotation the other input terminals of the amplifiers were connected to these scalp electrodes three at a time, and a short record was made from each combination. If a localized disturbance was found, this area was studied in detail by rearranging the leads about it.

The roentgenograms of the skull consisted of stereoscopic films taken with the occiput down, face down, and right and left lateral views. In appropriate cases films were made with the head in special positions to show the optic foramina, internal acoustic meati or base of the skull.

The neurological examination included the standard tests employed to elicit dysfunction of the nervous system as well as such special examinations as visual fields, caloric tests, etc. It did not include an examination of the spinal fluid.

Selection of Cases—All cases of convulsive seizures and brain tumor that have been seen in this clinic and that have had all three procedures, history and neurological examination, roentgenography of the skull and electroencephalography are included in this statistical survey.

Definition of Terms—In order to clarify certain phrases that have been uncritically and loosely employed, the terms used in this paper will be defined.

"Idiopathic convulsive state" refers to those cases having major or minor seizures in which after complete examinations no etiological factor could be found. Obviously since the brains of these cases were not examined histologically we cannot state that they were normal. Moreover, the presence of isolated clinical findings such as a positive McEwen sign in the absence of hydrocephalus by ventriculographic examination, nystagmoid jerks on lateral gaze and mental retardation did not seem to us to warrant classification of the case other than in the idiopathic convulsive state.

"Positive clinical findings" refer to abnormalities found during the neurological examination such as aphasia, mental retardation, muscular paresis, ocular palsies, reflex changes, sensory disturbances of various types, etc., which usually indicate organic disease of the central nervous system. Isolated recordings such as nystagmoid jerks or positive Hoffmann's sign were not considered significant.

"Positive electroencephalographic (EEG) findings" means that at least one and usually

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more of the following phenomena, which are considered to be indicative of intracranial lesions, were present in the electroencephalogram: Irregular slow movements, localized spikes, marked increase in activity, and abnormal waves ranging from one quarter cycle per second to six cycles per second. By "positive localizing EEG findings" is meant that the abnormalities arose exclusively or predominantly from one area of the head.

"Positive x-ray findings" indicates that the roentgenograms of the skull showed abnormalities such as cranial diastasis, intracranial calcification, displacement of a calcified pineal body, etc., which are indicative of intracranial lesions. Such questionable changes as increased vascularity in the diploe, digital markings of the calvarium were not considered as "positive x-ray findings."

Findings in the Convulsive State

Although the series consisted of a predominance of males, the sex incidence played little role in the determination of presence or absence of positive findings so that the sex distribution of the different groups is not given.

As might be expected the series contained more adults than children and since the age incidence was a determinant factor in the frequency of positive findings it is given in the break-down of the series.

Although it might be expected that the electroencephalographic findings in the Jacksonian type of convulsive seizure would be confined to the side of the head contralateral to the motor or sensory phenomena, in our experience the disturbances are usually present from all regions of the scalp. Casamajor et al[1] have found that in the majority of the cases the electroencephalographic disturbances in Jacksonian epileptic attacks are generalized and that in only a relatively small per cent of cases are they more prominent on the side of the head contralateral to the motor or sensory phenomena.

In the accompanying table the data from this survey have been compiled (Table 1).

Positive Clinical Findings—It is astounding how infrequently abnormalities are detected on neurological examination of patients subject to convulsive seizures. In only 22.2 per cent of the patients were such changes present, and the majority of these patients were ones suffering from intracranial neoplasm. In the so-called idiopathic convulsive group only 7.6 per cent showed any clinical stigmata, and the majority of these mental retardation. It is evident that the age of the patient made little difference in the likelihood of significant neurological abnormalities being present.

Positive X-ray Findings—Even more astonishing than the paucity of neurological abnormalities is the infrequency of roentgenologically demonstrable changes in the head. In

TABLE I

FINDINGS IN THE CONVULSIVE STATE

			Convulsions Associated with		
	Total Convulsive Cases	*Idiopathic Convulsions*	*Brain Tumors*	*Cerebral Trauma*	*Other Organic Neurological Diseases*
Number of cases	362	274	60	5	23
Positive Clinical Findings total	81 (22 %)	20 (7.6%)	44 (73.3%)	3	14
under 16	27 (22.7%)	10 (10 %)	5 (71.4%)	0	12
over 16	54 (22.2%)	10 (5.8%)	39 (73.6%)	3	2
Positive EEG Findings total	277 (74.5%)	208 (75.9%)	48 (80 %)	4	17
under 16	109 (91.6%)	91 (91 %)	7 (100 %)	0	11
over 16	168 (69.6%)	117 (67.2%)	41 (77.4%)	4	6
Positive X-ray Findings total	34 (9.4%)	7 (2.5%)	22 (37.6%)	3	2
under 16	7 (5.9%)	3 (3 %)	3 (42.9%)	0	1
over 16	27 (11.1%)	4 (2.3%)	19 (35.9%)	3	1

only 9.4 per cent of the cases were significant findings present and the majority of these were in the brain tumor group. In only seven cases out of two hundred and seventy-four cases of idiopathic convulsions did skull films reveal any abnormality. It is of interest that only one of these seven patients did not have positive electroencephalographic findings. That case was an adult female whose skull roentgenograms showed hyperostosis frontalis interna.

Positive Electroencephalographic Findings—In all types of convulsions the electroencephalogram showed a high percentage of abnormal records with little variation in the frequency of such altered tracings whether the cause of the convulsion was known or not. The age incidence was of great importance in determining the percentage of positive findings. In all cases under sixteen, 91.6 per cent showed abnormalities in the cerebral electrical rhythms, while in the adult group the incidence of abnormal records was only 69.6 per cent. A somewhat higher percentage of abnormal electroencephalograms was obtained from the brain tumor group than from the idiopathic group.

Discussion—Thus there is no doubt that electroencephalography is a much more valuable aid in the diagnosis of the convulsive state than roentgenography of the skull. One might go even further and say that it is more valuable than a clinical neurological examination. This is a misleading statement, for a disturbance of the cerebral electrical rhythm is not necessarily pathognomonic of idiopathic epilepsy and its significance can only be assessed when considered together with the clinical findings. This study does indicate that electroencephalography could eliminate much needless roentgenographing of the skull in the convulsive state, particularly in young children.

The question has frequently been raised whether the electroencephalographic findings can ever be said to be pathognomonic of the convulsive state. Lennox and Gibbs[4] state that approximately 10 per cent of the general population have abnormalities of the electroencephalogram that resemble those seen in the patients suffering from epilepsy. However, only 1 per cent of the general population suffers from clinical epilepsy so that some 90 per cent of those showing abnormalities of cerebral electrical activity live normally in spite of the epileptic manifestations present in their brain waves. For this reason one could not say that any electroencephalographic pattern is positive evidence that the individual has convulsive attacks. On the other hand, we believe that it is fair to say that if the individual has certain seizures or fits, which from their description might be epileptic, and the electroencephalograms show abnormalities compatible with those seen in that condition that the chances are very great that the individual is suffering from convulsive seizures.

We have seen not infrequently a patient who was referred because of some other dysfunction of the nervous system whose cortical activity was what we would ordinarily call typical of the convulsive state. Whether these cases would ever develop epilepsy is unknown. It may perhaps be unfair at the present time to label these people who have such abnormal electroencephalograms as potential epileptics.

Findings in Intracranial Neoplasms

Abnormalities in the cerebral electrical potentials in cases of brain tumor were described in 1936 by Walter.[9] Since that time the value of electroencephalography in the localization of intracranial lesions has been frequently stressed (Case,[2] 1938, Case and Bucy,[3] etc.) In infratentorial tumors the changes have been less frequently described than in supratentorial tumors but recently Smith et al[6] have pointed out that abnormalities are present in tumors of the posterior fossa, and that these changes may have localizing value.

In the present series the majority of the cases were adults, only nine infratentorial tumors and eight supratentorial tumors occurring in children under sixteen years of age. The diagnostic value of electroencephalography did not appear to be any greater in the younger than in the older group. For this reason the series is not divided on the basis of age incidence.

Posterior Fossa Tumors—There were twenty-nine cases of tumor in the posterior fossa, which had all the prerequisites for this survey. All twenty-nine cases had "positive clinical findings" and twenty-eight cases could be accurately localized.

In seventeen of the twenty-nine cases roentgenograms of the skull showed abnor-

malities. In seven of these cases the changes were due to intracranial hypertension, and had no localizing value. Eighteen cases had "positive electroencephalographic findings," which were interpreted as resulting from generalized increased intracranial pressure. As confirmation of this conclusion, fifteen of these eighteen cases had papilloedema. Four additional cases with papilloedema had no abnormal findings in their cerebral electrical tracings.

Supratentorial Tumors—The value of electroencephalography in the localization of supratentorial tumors is confirmed by the review of our series of ninety-seven cases. Although the majority of the cases could be diagnosed and the tumor localized accurately from the clinical examination, the electroencephalographic findings were welcome confirmatory evidence. However, in fifteen cases the tumor was accurately localized by electroencephalography when the clinical findings were insufficient for localization. Electroencephalograms gave localizing evidence of the neoplasm in 52.6 per cent of the cases. It should be emphasized that when the electroencephalographic evidence was sufficiently definite to warrant drawing a conclusion it was quite accurate. It is true that in many cases the electrical changes were not sufficiently localized to justify a definite statement as to the locus of the lesion.

The roentgenographic examination of the skull revealed abnormalities that were in many cases of no localizing value, being merely indicative of generalized intracranial pressure, in fact in only 29.8 per cent of the cases were the findings of localizing value.

Discussion

It is of interest to note that only 45.2 per cent of this series of brain tumors had choking of the optic disc. This is in marked contrast to the 69.9 per cent incidence of this sign in the series reported from this clinic in 1935 (Ley and Walker[5]) and even to that reported in 1939 of 54 per cent.[8] Although the present group is not quite a representative series of brain tumors since it only includes those having electroencephalograms, it is probably valid

TABLE II

FINDINGS IN BRAIN TUMOR

	Infratentorial	*Supratentorial*	*Total*
Number of cases	29	97	126
Positive clinical findings	29	79 (81.4%)	108 (85.7%)
Positive localizing clinical findings	28	64 (65.9%)	92 (72.5%)
Positive x-ray findings	17	40 (41.2%)	57 (45.2%)
Positive localizing x-ray findings	10	28 (28.8%)	38 (30.1%)
Positive EEG findings	18	81 (83.5%)	99 (78.6%)
Positive localizing EEG findings	0	51 (52.6%)	51 (40.5%)
Convulsive state	0	60 (61.6%)	60 (47.6%)
Papilloedema	22	37 (38.1%)	57 (45.2%)
Positive localizing EEG findings and papilloedema	0	24	24
Positive non-localizing EEG findings and papilloedema	15	9	24
Positive localizing EEG findings without papilloedema	0	27	27
Positive non-localizing EEG findings without papilloedema	3	21	24

to draw the conclusion that brain tumors are being seen much earlier now than formerly. At this period in the life history of the tumor it is frequently difficult to make an accurate diagnosis. The assistance of any technical aid such as electroencephalography, which gives better than a 50 per cent localizing diagnosis is indeed welcome.

The question may be raised whether one may make a positive diagnosis of a brain tumor from the electroencephalographic findings. We believe that such a diagnosis is not warranted on the basis of any type of electroencephalographic findings. From our experience it has been impossible to differentiate electroencephalographically between the changes of electrical activity seen in cerebral abscesses, cerebral scars and cerebral tumors. At times due to the peculiar localization of the disturbance and from certain electrical peculiarities we should incline toward one or the other condition. We know that such an impression can never be entirely accurate. The most that can be said is that there is a local disturbance of the cerebral potentials in one part of the head, and that probably the lesion is present at that point.

Conclusions

Electroencephalography is an important and valuable aid in the diagnosis of the convulsive state and intracranial tumor, giving definite evidence of alterations in the cerebral electrical activity in a large percentage of cases. Roentgenography of the skull, on the other hand, rarely shows abnormalities in the convulsive state. It is, therefore, suggested that electroencephalography rather than roentgenography of the skull be used as a routine procedure in the diagnosis of the convulsive state.

In intracranial tumors the incidence of localizing alterations in the electroencephalogram is approximately 50 per cent but such changes are present more often than alterations in roentgenograms of the skull. Moreover, localizing phenomena are present in cases that have no clinical localizing signs. Electroencephalography should be a routine procedure in every case suspected of harboring an intracranial tumor.

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AMERICAN PSYCHIATRIC ASSOCIATION ELECTIONS

At the Ninety-Ninth Annual Meeting of the American Psychiatric Association held in Detroit, Michigan, May 10-13, 1943, the following officers were elected:

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Omaha, Nebraska.

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Ralph C. Hamill, M.D.,
Chicago, Illinois.

Delusional Episodes

WALTER O. JAHREISS, M.D.*
Baltimore, Maryland

Human beings are prone to be uncritical of their own shortcomings. As long as this attitude remains within reasonable limits, it presents a buffer to sensitivity and feelings of inferiority. Indeed it is a cushion that makes life with oneself more bearable for many of us. However, when we become too uncritical, not only of ourselves, but also of our neighbors, then we begin to blame the latter when the fault rests with us. We project our own envy and jealousy. When this lamentable rationalization, this one-sided thinking and wishful falsification of reality deepens and broadens, then it may become incorrigible. And, if all the clinical circumstances tell us that this incorrigible error is due to, or has led to a morbid disturbance of the perception and immediate consciousness of what signs and happenings actually mean, then we speak of delusions, of a paranoid attitude or thinking.

This manner of thinking is a preformed reaction type that may become manifest under different influences, which in turn may modify the clinical picture of the paranoid reaction, as well as its course. The clinical prototype of delusional thinking is the so-called "true paranoia" developing on the basis of a rigid-sensitive-aggressive personality and following some key-experience. The course of this highly systematized syndrome of "rational" delusions is, as a rule, chronic but leaves the personality essentially intact. That is the main reason for the fact that many paranoiacs are never institutionalized while others are at least able to carry on a fairly well adjusted and unmolested existence for many years in spite of their delusions.

In one of the paranoid patients who recently came under my observation at Mount Hope Retreat the delusions had been present for more than twenty years; in another for about eight years, before the situation had become so dramatic and difficult to bear that hospitalization seemed inevitable.

E. Kraepelin,[1] in his research, found that of 22 cases of paranoia, twelve had been suffering from delusions for more than nine years before admission to a mental institution; in two patients the condition continued for more than forty years. If this is so, then it is quite possible, too, that some paranoiacs are never institutionalized. They may remain in the community as long as they are not too active or the delusions not of a nature that make their owner a chronic nuisance or a potential danger. It is probable, too, that some cases recover and correct their ideas without the aid of a psychiatrist. In fact, these mild forms have long aroused interest because of their deviation from the extremely chronic course of the "typical" paranoia. They have been variously termed "mild forms" (Friedmann[2]), "rudimentary forms," or "abortive and curable forms" (Westphal - Kraepelin[3]). They have been thought of as "latent paranoia" (Kraepelin[4]), which from time to time under the pressure of different experiences develop actual delusional reaction which eventually fades. Or they have been "unmasked" as paranoid forms of a manic phase; an involutional condition; or are interpreted as a specific disease-entity (K. Kleist[5]). No matter how one attempts to solve the problem of classification, the fact remains that some definitely delusional states are reversible.

Case 1—Our first case is that of a primitive, poorly developed delusional reaction in a young soldier. The eighteen-year-old boy's mental equipment was somewhat below average, but his progress in school as well as in later years was even more handicapped by the fact that he was "highly nervous and could never sit still." Prior to induction he had only occasional employment and remained a burden to his parents. His mother had to look after him as he could not take care of himself. His friends had joined the army, and their glowing description of the life of a soldier enticed patient to enlist. He claimed that the enlistment sergeant promised him a place in the medical corps. To his chagrin, he received no such assignment. He resented this deeply, became homesick and began to feel that everybody was against him and trying to boss him. His stomach revolted and he

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became "shaky." He was sent to the cantonment hospital and from there to the psychiatric ward. "Nurses and everybody were down on him." They knew that he had been deceived and now "they framed him and would like to kill him." That is as far as his paranoid ideas went. They remained simple and dull, without any attempt at elaboration until he was discharged from the army after five and one-half months, the only solution for his syndrome. His case was labeled "paranoid condition," which may describe a condition more serious than warranted between "true paranoia" and paranoid schizophrenia. The patient came to Mount Hope Retreat, where he displayed neither paranoid ideas nor hallucinations, nor any other symptoms than those which are to be found in an immature, emotionally unstable and highly suggestive person. The delusional episode was terminated with the end of the situation which had created and nursed it.

Case 2—A second case is a thirty-nine-year-old physician, who developed a delusional syndrome that followed the pattern of a sensitive paranoid reaction type. His premorbid personality was described as intelligent, quiet, introspective, meticulous in every way and somewhat tense. About seven months prior to admission to Mount Hope Retreat, patient began to lose interest in his friends, home, family and duties. He displayed a strained manner, was slow, giving deep thought to trifling things, and grew more and more suspicious. He thought that people were talking about him. He overheard hints and remarks directed to an old wound. It seems that about eight years prior to the onset of his disturbance, patient exposed himself, while intoxicated, and had the impression that he was seen by an elderly woman. He had forgotten this episode and certainly had never heard anybody mention it to him or allude to it in any way until the onset of his present disturbance. Then his friends and colleagues by indirect hints and references wanted him to realize that they knew about this regrettable happening and about his faults. In a well-meaning way they referred to his moral conduct. He spoke to his brother about it and confronted his friends, but no denial could dissuade him: "It happened too often and it was too evident." He was a patient of Mount Hope Retreat for about five months. A state of tenseness with stilted, rigid and apprehensive behavior slowly and gradually subsided. He kept to himself, said little spontaneously, yet was able to carry on a conversation, but in an uneasy, strained and polite manner. He would misinterpret remarks of Sisters, physicians and patients. They knew about his moral failures, too, and their remarks hinted at his being "a sissy, not a real man." Patient was indescribably sensitive, and knew it. "I am too sensitive, I have some pride and I often feel inferior to others; I think too much of what others think of me." No new delusions developed and patient never hallucinated.

About three months after admission, patient corrected most of his delusional ideas. "I see things in a different light, as I am separated from my past. The more I worried, finding hints in the remarks of others, the more delusions I found in my own life." He became more cheerful and active, more sociable and natural. When he left the hospital, he had gained full insight into the morbidity of his past condition.

We were asked about the patient's prognosis when an apparent improvement had begun. We expressed ourselves fairly hopeful because of this improvement and because we felt that there was an underlying depressive condition which might disappear, ending the paranoid syndrome. However, we were not completely convinced of this outcome and would not have been surprised if, after some seeming improvement, the various ideas of reference had flared up again, leading to an incorrigible and chronic paranoia.

Kraepelin[6] mentions parallel experiences in several cases of an apparent paranoia which proved to be manic attacks, in which the manic component was almost unnoticeable. If those attacks remain isolated, how can this diagnosis be proved, unless one states dictatorially that the course of paranoia is always chronic? Then it would follow that paranoid episodes must be mere phases of some other underlying mental disturbance. Or the explanation may be advanced that all cases of paranoia are reactions of "manic-depressive personalities to some psychic trauma" (Specht[7]). Both of these concepts force the actual observations rather than clear the facts and explain the difficult problem. There seem to be in some cases, connecting links with what is called the manic-depressive or the schizophrenic

group, or other disturbances which will be pointed out later.

In the case history we have just related, the patient's personality was characterized by his relatives as well as by himself as serious, tense, unusually sensitive, proud and yet inclined to feel inferior and to wonder what others thought of him. We shall find a very similar constellation in the next patient, a forty-five-year-old female school teacher. While it was apparently possible to break off the paranoid development in the physician when it was still in statu nascendi, the teacher came to us when already beyond this stage and at a time when the development had reached a dramatic climax which terminated further elaboration of her delusional system, but left the entire episode uncorrected. It was incorporated, but remained a foreign body.

Case 3—Until four years prior to patient's admission "everything had been lovely and running smoothly; then a young teacher turned up in the school." Friction between the two women developed. One day patient overheard a young boy of her class making deprecatory remarks about her face. She resented it, but thought nothing further of it. "Young children are liable to do that." However, these remarks were repeated by others, and taken up by the new teacher who circulated them widely. Eventually most of the teachers, including the principal, were involved in the plot against patient. There were signs, whispering and laughter. They were putting their fingers to the mouth, indicating thus that patient had a wide mouth; that she was homely, ugly, had the face of a monkey, looked like Mickey Mouse, had a snub nose, and so on. Patient tried to combat these ideas; to persuade herself that she was mistaken; that it was all imagination due to her being so over-sensitive. But it was all in vain. She could not bring herself to overlook the game. It was too obvious; some of the teachers used to fix their faces in imitation of a monkey. It was a systematic drive and persecution. Nobody helped her, even God seemed to work so slowly. She "was inwardly gnawing at her heart," and finally resolved that she would take matters into her own hands. One evening, after dinner in the boarding school, patient seized a long knife and slashed the young woman, whom she considered the actual leader of the plot, across the face, severing an artery. Patient wanted to mark her for life, and to make her mouth reach from ear to ear, because she had made fun of patient's own mouth. Immediately after this incident she was brought to Mount Hope Retreat.

This case is interesting in many respects. The content of her delusions was centered about her "looks," particularly her face and her mouth. There are not many paranoid syndromes of this kind. I remember a woman in her forties who was, in a hypochondriacal-delusional way, concerned about her beauty.[8] This patient argued: "My face is something I cannot change; I was born with it; I know I have a large mouth and a snub nose. If they had made remarks about my behavior, my moral conduct, I could have changed that if it really needed it." One might suppose that the large mouth means quite a different part of the body. We found no proof of that.

Secondly, there is the fact that any further development of patient's sensitive paranoid reaction, extending over almost four years, was cut off when she struck the young teacher, whom patient considered responsible for the tormenting persecution. During two years since, patient has not experienced any signs or whispering or allusions or remarks about her face.

M. Desruelles[9] reported the case of a forty-four-year-old woman in whom a paranoid psychosis lasting for about three years and centering upon the unfaithfulness of her husband was terminated with his death. The author speaks of recovery following an "emotional shock." However, our patient did not correct her ideas, and is still convinced that she gave the young teacher what she deserved. It is a circumscribed delusional episode. Though the chapter is closed, it is not forgotten and a following chapter may still be written. I think that this is one reason, irrespective of others, that prevents us from calling this case simply a paranoid type of an involutional psychosis.

Case 4—This patient, a fifty-four-year-old housewife, had a delusional episode which could, with justification, be diagnosed as an involutional psychosis. She had been married for thirty-one years and with the exception of the last year had lived in a northern town. She was a quiet woman, affectionate and somewhat sentimental; easily moved to tears and centering practically all of her thoughts,

hopes and worries on her home, her husband, and their only child. The family was hit hard financially during the depression, but she went through it courageously. When their son married about three years prior to her admission to Mount Hope Retreat, it took patient some time to reconcile herself to the new condition. However, she found renewed interest in the grandchild. At about the time of her son's marriage, patient ceased to menstruate, but she did not show any particular nervousness or depressed moods before or after the menopause. Two years later, patient's husband obtained a position in Virginia and they both went there in September, 1939. This was a blow. She had to give up the home where she had been happy for thirty years, and where her friends were. Soon she began to complain of nervous symptoms which the doctor attributed to the change of life. But in the spring of 1940, definite ideas of jealousy developed and began to spread and grow more and more absurd. It was not only that she accused her husband of being unfaithful to her and of having relations with a "tall, dark woman," but she "remembered" how he met this woman once, in the old hometown, years ago. She had made signs to him, when he and patient left a movie theater. There were references in radio speeches; a dictaphone took down everything patient said; she cut out words from handbills she found on her door and arranged them so that they seemed to convey "some message." She talked to neighbors about it; watched the car with "this woman" from the windows of her apartment.

Patient was natural, easily approachable and communicative, but given to sudden changes of mood from silly jolliness to argumentative or even belligerent attitudes; from a fussy discontent to crying and childlike sobbing spells. Six months after admission, most of her paranoic ideas had disappeared; she realized that "she must have been sick," and blamed the medicine which the doctor had given her in fall and winter of 1939-40. Three months later, patient spoke in praising words of her husband; she was not euphoric then, but "quite homesick."

Certainly this episodic course of the disturbances which started like any paranoia reminded one of the paraphrenic type (Kraepelin's) doomed to a chronic and incurable state, makes one wonder whether it was anything beyond an "involutional" paranoia. The fact that a sister had a similar disturbance which lasted for more than eighteen months during the climacterium, seems to confirm this diagnosis rather than to contradict it. On the other hand, it cannot be overlooked that the mental disturbance did not start until three years after menopause. The difficulty of putting psychiatric cases into their respective diagnostic drawers is recognized and is to many psychiatrists such an inadequate and insufficient task that they do not even attempt it. Instead they evaluate each case according to its own dynamics and prospects. Perhaps such a transitory period of fact finding will lead to a better etiologic system. Psychiatry cannot only indulge in the study of individuals and individual traits, but must rely on the study, knowledge and even treatment of typical pathological constellations, irrespective of name or explanation of individual traits as variations of those typical "diseases" or "syndromes" or "reaction types."

Case 5—The following case may demonstrate our diagnostic shortcomings. A twenty-three-year-old university student was admitted to Mount Hope Retreat after he had been ill for a week. He was described as an "extravert personality, full of pep, always bubbling over when talking, always inclined to discuss and to argue with others; nervous; cried when he became excited; intelligent; independent and domineering, a leader of the crowd; of high moral standard and idealistic; generally cheerful, although at times discouraged and depressed." At the end of 1939 he thought much about "peace," but was interested in the problem in an academic way. During a lecture a professor remarked to the class that they were "suckers to study law, as if they would be able to take their exam; they would be in the trenches before that time." In the afternoon of this day he tried to convince friends of his peace plan; a few days later he began a vigorous campaign for peace by writing influential people. He flew from Washington to New York and found encouragement. He was told to "go ahead." When he came back, he wanted to see the President and to tell him that he should stick to strict neutrality and isolationism. He began to feel that he was watched by agents of the F. B. I. as a possible enemy of the Government. He became excited, did not sleep and preached to his classmates incessantly.

When patient came to Mount Hope Retreat, he was nonchalant, with a boyish charm, not stiff or ill mannered. He soon displayed rapidly changing moods—laughing and cheerful, morose and irritable, or tense and apprehensive. There was a definite readiness to interpret things and happenings as to their hidden meaning: "You don't like it if everyone speaks to you in signs," and a tendency towards symbolic thinking. For instance, on the board of a Chinese checker game patient had arranged three groups of marbles of different color with a red one in the middle hole. He showed it to the physician, asking him whether this meant anything to him. His own explanation was that "the figure on the board is a star; it is a 'sign.' The different colors mean: brown for his name; the red marble in the center indicates that he has won a prize; the other colors are white and blue, because of the red, white and blue of the American Flag." Patient was self-confident, bragging about his knowledge; but from the first day in the hospital he had some insight into his condition.

He said that he was "kind of excited," that he was "thinking in transcendentals," that he "thought my mind was gone;" "I was going to be like Isaiah, the Prophet, since my name is Isaiah."

Two weeks after admission, patient calmed down. He was cooperative, mildly cheerful and somewhat sentimental. He confirmed essentially the history given by his friends and described himself as sensitive, serious and ambitious. He "wanted to be an unusual guy;" and was a good mixer; never downhearted for more than a day or two. He was stirred by the peace problem, the imminant draft and the possibility of war. He was excited, talked much and slept little. He thought that America should stay out of the war; "matters do not have to be rushed." Patient never hallucinated; his apprehensiveness and ideas of reference were corrected. A few days later patient was dismissed. The whole episode lasted not quite four weeks.

The facts and dynamics of this case are self-evident. It is essentially the same type of situational paranoid reaction we found in the first of our examples. That the great difference in the personalities and the life-history of the two patients will lead to different delusional contents is only to be expected. The similarity of the two is only superficial. With the young private, the delusional reaction is terminated by and with his discharge from the army, whereas with the student, the episode came to an end, although the actual situation — impending war and threatening draft—remained unchanged. A further distinction is that the paramount idea with our student, "keep America out of war," was not a delusion, but an opinion which became a completely enveloping conviction. A third difference is even more striking. Our student has been swept off his feet by an emotional storm that deprives him of sleep; sends him rushing from place to place; makes him give good but unwanted advice to his sister by extensive and expensive long distance telephone calls; and finally makes his thinking and his speech rambling and flighty and gives his whole behavior a definite erotic tinge. I am not primarily interested here in the discussion of an etiologic classification of our patient. He was sent to us with the diagnosis paranoid type of schizophrenia. It would be at least equally justifiable to term this episode a manic phase of a manic-depressive psychosis, and one might even have some doubt as to the psychic provocation of this phase, although this seems to be quite evident. One may go one step further and classify this case as a specific entity in itself, related to the great groups of endogenous psychoses and yet different from them as to etiology, symptomatology and course, and may call it "expansive auto-psychosis" (Wernicke[10]), or "acute inspiration psychosis" (Kleist[11]). At any rate, there are among manic patients those who display a definite delusional picture. In three cases of this type that were treated at Mount Hope Retreat in recent years, the premorbid personality was marked by a distinct tendency to visionary thinking and even before the end of the manic phase these patients realized that their delusional ideas were only "imaginations." One said: "Everything I do has a particular significance; if I would tell it, it would sound crazy;" or: "I know it is better to give up this mythical thinking;" or: "But of course these are only thoughts, ways of thinking, not realities." In another patient where paranoid ideas were budding and changing constantly and grotesque and fantastic delusional chaos appeared, the so-called "paraphrenia phantastica"

of Kraepelin aptly described the condition. "Products of an unrestrained imagination . . . those were all foolish ideas, like the fancies of poets." An attempt, too, has been made to separate this type of curable, episodic delusional disturbance from other endogenous psychoses, and to establish it as a specific entity under the name of "acute expansive confabulosis" (Kleist[12]). To the majority of psychiatrists this will seem a mere shuffling play with groups and subgroups in an antiquated manner without getting anywhere. Yet, I wonder whether some kind of a new "syndromatology" might not lead to new biological insights and perhaps to a more speciffic application of as yet rather unspecific methods of medical treatment.

Other cases, too, have met with diagnostic difficulties, and though one may hesitate to assign them either to the manic-depressive or the schizophrenic group, there is even a third possibility to consider. The sudden onset and end; and the attack-like repetition or the slightly clouded condition of these disturbances may point to some pathogenic relation with the epileptic group, somewhat in the sense of Kleist's[13] "periodic delirious states" ("periodische demmersustende").

Case 6—This patient displayed an apparently typical manic excitement. In other respects he was remarkably free from "typically" manic symptoms.

There had been two similar attacks, each lasting about three weeks. A sudden and stormy onset; a bewildered, paranoid-hallucinated condition with passivity feelings and other disturbances of activity—consciousness, and a brief episode of aimless wandering through the streets until he returned, unable to recall where he had been. These symptoms may point to some etiological connection with the epileptic group, despite the apparent manic setting. Every psychiatrist of experience will have encountered the case, in which one or more attacks of this kind were diagnosed as schizophrenic or manic phases, until finally the occurrence of epileptic seizures revealed their true nature as "preceding" delirious states. If those attacks are not followed by convulsions, then their epileptic nature remains quite hypothetical, unless, perhaps, electro-encephalographic finding could render it more probable.

Case 7—In the case of this twenty-eight-year-old school teacher, it seemed equally justifiable or arbitrary to diagnose a confused manic-depressive psychosis, a paranoid-hallucinated schizophrenic attack or an "episodic delirious state" as a satellite of the idiopathic epilepsy. The cloudiness and confusion was unmistakable, although patient's recollection of the episode was less impaired than might have been expected. The episode lasted six weeks.

Case 8—This case displays clearly the periodic course and the delirious condition of the so-called "episodic delirious state."

The thirty-three-year-old designer had suffered five previous attacks from 1928 to 1937, when he came to Mount Hope Retreat. The first attack, during which he was "excited, overactive, violent and talkative," lasted about two weeks, and was classified as "undiagnosed psychosis." The second attack, seven months later, seemed to have lasted longer and was diagnosed as manic - depressive psychosis, manic excitement. The third attack, two years later, was over in about four weeks, and was again classified manic. Patient showed "increased spontaneity and some circumstantiality. There were no hallucinations nor delusions and patient appeared well orientated."

Of succeeding episodes we have more information. According to his own statement, corroborated by his mother and wife, all attacks were preceded and accompanied by severe headaches; only once was there vomiting; patient complained of sensitivity to light. He was subject to migraine-like headaches frequently between these psychotic episodes; there was no history of epilepsy in the family or himself.

The wife met patient after the third attack, but she was unaware of their existence, and never observed anything unusual in his behavior until the wedding day. He was described as gentle, kind, industrious and ambitious, a good and trusted worker; religious, active in church work and a good mixer with many friends.

The day before his wedding, in October, 1933, he felt tired, had headaches and went to see a doctor. In compliance with a custom of their native land, the prospective brother-in-law had decorated the bed with oranges and eggs. Patient became irritated and "stimulated" at this sight, as if it were an invitation to intercourse. During the night he changed

from his usually kind and considerate manner to brutal and confused behavior. He attacked and injured his wife so severely that she had to be treated surgically; he talked about religious items in a fantastic way. Patient was taken to a general hospital where he recovered from this confused and excited condition within ten days. After that he was "absolutely normal and his old self again." About a year later, patient had another disturbance of this kind, but a lighter one, and was well in a week's time. He was cared for in his mother's home.

Three years later the sixth and most severe attack occurred, which led to his admission to Mount Hope Retreat. Patient had complained of headaches and was sleepless for a few days; then he suddenly became excited, and at a dinner in the presence of the pastor of his church he began to talk in an insulting and dirty, filthy way about sexual things, and then claimed that he was seeing God; that he was God himself; and that the end of the world was coming. He remained talkative, restless, combative and struck members of his family during the next three days, again mixing profanity and ecstatic religious remarks. He was the Holy Ghost; had scars on his hands, and so on. He accused his wife of trying to poison him. On the fourth day after the sudden outbreak of this psychotic attack, patient was admitted to Mount Hope Retreat. He appeared sleepy and bewildered, was morose and irritable and had apparent difficulty in grasping question. He was not quite orientated as to time and place. Two days later he appeared still bewildered; answered questions vaguely, but stated that he felt better. He could not figure out what was wrong with him, but said that he would be all right in a few days. After another week, he was more cheerful; admitted that he had had "very vivid imaginations," but could not remember that he had talked about the end of the world, or that he had thought he was God or the Holy Spirit. Patient remained for three more weeks overactive, restless, suspicious, thought he had been poisoned with a cigarette, was afraid of other patients who looked "with a menacing glance at him," but since Mount Hope Retreat was a Catholic institution, he felt that no harm would come to him. Despite his seeming activity and alertness, he looked tired and worn out and was always slow in grasping questions and answering them. Three days later, he had full insight into the abnormality of his past condition, which had lasted about five weeks. He thought that he had been "confused again," and attributed it to overwork. He left the hospital and returned to work. A second child was born in the automobile while he was driving his wife to the hospital; the child died ten hours later, but during all this, patient displayed normal attitude and behavior, according to his wife's statement.

Ten months later, patient suffered a seventh attack which, however, was mild. He had severe headache, felt uneasy, appeared tense and suspicious and told his wife that he was getting queer ideas again. A doctor was called in, and in a few days patient was well and returned to work.

Two months later an eighth attack set in. Patient complained of headache, slept little, was irritable, restless, picked up small articles, putting them into his pockets. He talked in a filthy way, even to complete strangers; had religious ideas. The Blessed Mother came down from heaven to dance with him. Patient was admitted three days after the sudden onset of this attack. He was talkative and distractible. Complained of pains and heat in his head; tried to cool his forehead with wet towels and said that he "could not stand the light in his eyes." He did not seem to be orientated as to time and place, although he evidently recognized the physician. He was tense and apprehensive. He attacked another patient because this man was chewing candy. Patient demanded to know why this man had something to chew. On the following day he attacked another patient for no apparent reason. About a week later, patient was seemingly elated again, singing and talking and walking around in an odd posture, knees and hips bent like an old gouty man, laughing and grinning. For another five days, patient acted as if he was intoxicated; talking, laughing, being irritable and apprehensive; seemingly alert and yet unable to understand quickly what was said to him; apparently jolly and yet with a worried, tired and worn-out expression on his face. Then he became well suddenly and realized that he had been ill. He said that he got the notion that his employer thought of dismissing him; he had severe headaches and a dizzy feeling as if he was intoxicated. Again he denied, or did not recollect, that he had

fantastic religious ideas. When he began to realize that he was back in Mount Hope Retreat, he felt depressed, and he denied absolutely that he had been cheerful at all.

This episode lasted sixteen days and as from each of the previous attacks, patient recovered completely.

There might be some speculation whether this patient belongs to the small group of cases in which migraine attacks are accompanied or followed or have as equivalent clouded and delirious states.[14] This possibility deserves mature consideration in the last of our cases.

Case 9—She is a married woman and was twenty-six years old when she had her first psychotic disturbance. A sister suffered severe attacks of headache but otherwise the family history is essentially negative.

Patient had headaches at the time of the monthly period, and occasionally had "feelings of dizziness."

We observed in our patient two delirious episodes of a quite identical psychotic picture. Each lasted four weeks, with a free interval of one year. Patient recovered completely from the second attack. She was entirely orientated and clear, cooperative, natural, free of mannerisms; was sociable, active, and able to discuss her problems sensibly. She remembered how tired she felt, her headache, and then suddenly became excited and confused; she had no explanation for that, and very little recollection of what actually happened since entering the hospital.

Of the second attack, patient had only a dim recollection, although some details could be remembered clearly. She had no complaints except of occasional feelings of dizziness, which lasted not longer than a minute. Attacks of petit mal were not observed.

While one may be satisfied in assigning these last four cases to one of the schizophrenic sub-groups, or in terming them amentia or in explaining their occurrence and symptoms by pointing out the particular dynamics and interpreting the hidden motives, the fact remains that the essential pathogenic factors are yet unknown.

Comment

Eight cases reported have one important feature in common, namely, the fact that a delusional syndrome developed in each of them and remained episodic or recurred periodically in an almost identical way. In other respects they are very unlike and are not supposed to represent a "new" syndrome or even a disease-entity.

The question is a prognostic one—why did not these delusional states become chronic? Why did they pass and remain isolated or recur after "free" intervals only to lead again to recovery?

Prognosis is an extravagant enterprise in psychiatry. Thomas A. C. Rennie[15] has recently, with great caution and scrutiny, analyzed one hundred recovered cases of schizophrenia. He points out several incidents that seem to play a role in recovery and may warrant a favorable prognosis. As the most striking factors, Rennie mentions long-term contact with a physician—which, of course, involves the benefit of time as healing agent—and a particular mental condition of the patient that enables him to accept guidance and to profit by it. Nobody can reasonably deny the wholesome influence of such a constellation. However, the even more surprising fact that "40 per cent represents an average in all clinics for recovery or improvement of schizophrenic patients not treated by any form of shock," seems to indicate that a large percentage tends to get well, or has some self-healing tendency, similar in this regard to the great majority of manic-depressive attacks.

Only one of our patients (case 4) was subjected to modern treatment (insulin subshock) and this remained without visible effect. Yet, we should be very pleased, indeed, if we could say that it was our treatment which cured the patients. But this is, with one likely and two possible exceptions, not so. In the first case the primitive delusional reaction was terminated with the patient's discharge from the army; and in the third case the paranoid ideas remained uncorrected, although any further development was stopped with admission to the hospital. This seems to indicate that removal from an apparently pathogenetic environment had the most beneficial and instantaneous influence, and one may well argue that the delusional development did not only occur in reaction to an unwanted environment, but that it was built up and maintained as a means to get away from this unbearable situation.

In the second of our cases, however, we

had the impression that the patient's gradual reorientation and the final correction of his delusions were definitely facilitated and stabilized by the various therapeutic influences of the hospital. And yet, even in this case, as it was mentioned above in the brief history, we had some feeling that the basic disturbance was an emotional (depressive) rather than a topical one, thus making the prognosis more "favorable."

Sweeping emotions seldom last long, and it seems that delusions following in their trail have a tendency to die with them; particularly if they have not had time to "mature" and become systematized. That is why such episodes may appear as "masked" manic or depressive phases, and some may just be that; or why they are termed "psychose passionelle;"[17] or "acute inspiration psychosis" (as case 5); or "involutional paranoia" (as case 4), and so on.

In three more of our cases the promoter of a loose and fleeting delusional thinking appeared to be a clouded state of consciousness, the productivity of which may justify the descriptive term of a "periodical delirious state."

The duration of these delusional episodes, occurring in a definite "emotional" or delirious setting was brief, lasting from two to six weeks; and their onset was acute. We are not in a position to claim that these patients were cured by the treatment they received. We think that their psychosis was essentially reversible in nature and that we could only strive to support this self healing tendency.

As to the delusional contents of our cases, they do not differ significantly from those we see in chronic development. However, except for case 3, the only one in which the delusions had grown for years prior to hospitalization, the paranoid ideas never became well organized. They did not have time to ripen or develop a pre-morbid personality and except in cases 2 and 3 did not present the tenseness, the rigidity and tenacity which seems to be a fertile soil for systematized delusional thinking.

So far as can be judged from our material, the following conditions may render the prognosis of delusional reactions favorable: Sudden onset; definite emotional (thymopathic) setting; essentially situational reaction; absence of a "characteristic" premorbid personality; and, perhaps, hospitalization, while the delusions are still poorly organized.

There seems to be a fair chance that a paranoid reaction, displaying some combination of two or more of these features may lead to a delusional episode rather than a chronic development.

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A Tuberculosis Case-Finding Program in the Mental Hospital

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The high incidence of tuberculosis among patients in mental hospitals has been the subject of numerous reports and has given rise to studies designed to select the best of various methods for use in mass surveys.

Burns[1] reported tuberculin tests on over fifteen thousand patients and two thousand employees. Eighty-two per cent of the former and seventy-two per cent of the latter reacted to tuberculin; 9.2 per cent and 3.7 per cent, respectively, showed evidence of active tuberculosis by x-ray or bacteriological examination.

Bogan et al[2] found a tuberculosis mortality rate of seven per thousand which they say is ten times that of the state at large.

Plunkett[3] reported a tuberculosis death rate of 8.12 per thousand in New York State mental hospitals. McGhie and Brink[4] found an incidence of only 3.7 per cent active tuberculosis among 1209 patients surveyed with 5 per cent showing significant pulmonary lesions. This is lower than the figures reported by Burns, but is more than twice the incidence of active disease usually found in surveys of the general population. A most comprehensive review by Block et al[5] indicated that in studies including more than a million persons in the United States and Europe approximately 1.5 per cent of the supposedly healthy adult population showed evidence of tuberculosis.

Fellows[6] found slightly over 1 per cent of apparently well individuals to have pulmonary tuberculosis at an average age of eighteen years, whereas Harrison and Schein[7] found 3.6 per cent of 2186 mental patients to have x-ray evidence of the disease.

In a previous communication[8] it was reported that in 38 autopsies performed on mental patients during 1935 at Eloise Hospital, 8 cases of unsuspected tuberculosis of the lungs were disclosed. The danger of uninfected patients existent in these cases of undiscovered infection is apparent. The intimate association of mental patients with each other combined with their lack of appreciation of proper hygienic habits is doubtless in large measure responsible for the high incidence of tuberculous disease among them.

We no longer believe that the type of psychosis bears any relationship to the incidence of infection. Bogan et al[2] found no such relationship at Longview State Hospital using the tuberculin test as their criterion. Wicks[9] found an insignificantly higher percentage of schizophrenic patients to have tuberculosis than those with other types of mental illness. At one point in our own survey[8] it was found that the percentage distribution of tuberculosis according to diagnosis closely paralleled the percentage distribution for that type of psychosis in the entire hospital. If there be any relationship between psychiatric diagnosis and the incidence of tuberculous infection, it more probably lies in the duration of hospitalization determined by the type of mental disease with consequent increased exposure and prolonged contact with infected persons rather than in any predisposition to infection determined by the disease per se.

In 1935 a survey of the entire mental patient and staff population of Eloise Hospital was begun. It was at first planned to follow the course usually prescribed for mass examination, i.e., intradermal tuberculin testing followed by x-ray of the positive reactors. Table 1 shows the results of the tuberculin tests of 2857 patients and 354 employees.

TABLE 1
TUBERCULIN TESTS

	No. Tested	*Positive*	*Negative*
Admitting wards	447	220 (49%)	227 (51%)
Hospital wards	2410	2137 (88%)	273 (12%)
Employees	354	283 (80%)	71 (20%)

Of the patients only 778 were x-rayed due to the tremendous load which this survey threw upon the x-ray department which already serves the large requirements of a 500-bed general hospital in addition to the 3700 mental and 4000 bed infirmary division of

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Eloise. Table 2 shows the results of the x-ray examination of this unselected group of patients.

TABLE 2
X-RAYS OF POSITIVE REACTORS

Negative	132
Insignificant and non-tuberculous	479
Significant (scars)	140
Active tuberculosis	27
Total	778

Only 3.5 per cent of the positive reactors were found to have roentgen evidence interpreted as active tuberculosis. Since it was not the object of this survey to detect all the cases of tuberculous infection, primary and obsolete, as well as active or suspiciously active, it was concluded that tuberculin testing was an unsatisfactory screen for this work. It excluded only 12 per cent of the older patients in residence and 20 per cent of the employees from the necessity of x-ray examination.

Rejection of tuberculin testing on this and other bases has been advanced by others.[10] The practical end to be achieved is the discovery of clinically active communicable infection.

The x-ray stands out as the most accurate single diagnostic procedure available for the diagnosis of tuberculosis.[11] Therefore our second approach to the problem was an attempt to x-ray the chest of each new admission to the mental hospital and in addition to examine each old resident who had never had a chest film.

From July, 1936, to August 17, 1938 (a period of a little more than two years), 1566 new admission examinations were ordered. In this group 959 examinations were completed yielding 24 cases of tuberculosis, 19 additional cases which were probably active and 96 instances of significant pulmonary scars. The first 900 of these patients were examined so as to make statistical study possible. Table 3 shows the consistency of the findings among them.

Added to the new admission examinations were 459 x-rays of patients of longer residence in the mental hospital. Among them 18 cases of tuberculosis were discovered. Thus, the incidence of active disease among the new admissions was 2.5 per cent and among the older inmates 3.9 per cent. This method of survey was abandoned because of the inability of the x-ray department to keep pace with our requests. Since the admission rate to the hospital was so high, it became apparent that the work would never be completed. Further, a routine stereoscopic x-ray examination on a large number of persons is a costly undertaking.

TABLE 3
900 NEW ADMISSION X-RAY EXAMINATIONS ANALYZED BY HUNDREDS

	1st	*2nd*	*3rd*	*4th*	*5th*	*6th*	*7th*	*8th*	*9th*
Negative	85	80	84	73	78	90	85	75	66
Significant	11	12	8	12	12	6	6	10	14
Positive	1		4	5	4	1		1	3
Not done	3	8	4	10	6	3	9	14	17

Early in 1940 Potter, Douglas and Birkelo[12] reported their experience with the large scale examination of chests by means of photoroentgenography. This method consists of photographing the image of the patient's chest on a 4" x 5" film. The image is produced upon a special fluorazure screen by x-rays from a 400 M. A. rotating anode tube using from 60-80 K. V. Light rays from this image are focused upon the small film through a special lens with rating F. 1.5, the whole outfit being mounted in a truncated four-sided pyramidal box which is suspended in such a way as to adjust readily to the patient's standing height.

This is the ideal outfit for use in mass surveys. It brings all the advantages of roentgenography to the examiner at a great saving in cost. This saving is effected, however, only on large scale use of the outfit. The high initial cost of installation requires that a large number of examinations be done before any saving is realized. At the present time Eloise Hospital is installing a 400 M. A. rotating anode tube but purchase of the photographing unit must be delayed due to the priority given a large order for these units by the United States Army.

To discuss costs in a scientific paper may not be appropriate; however, it is worthwhile to point out in a few words the advantages, financially, of a fluoroscopic method of examination for an entire hospital population. It is only too true that complete x-ray studies are not only costly but time-consuming. The

roentgenological department is frequently too busy with routine and emergency work of a general nature to be overburdened by a complete hospital survey. Figures show that the approximate cost of a two-plate stereoscopic roentgenogram is two dollars. The same study of figures shows the approximate cost of a fluoroscopic examination to be six cents. Complete fluoroscopic equipment should cost no more than one thousand dollars. Thus, it can readily be seen that by saving $1.94 on each examination by the use of the fluoroscope instead of the x-ray that the equipment could be paid for in the first 500 such examinations. From that point on, thousands of dollars of the taxpayers' funds could be saved for years to come. The saving of time and the overload on the x-ray department is inestimable. Thus, it would seem apparent that the use of a method, such as is described herein, is definitely warranted in large institutions.

Finally, it was decided in the interest of speed and economy to use the fluoroscopic method of screening. The literature indicated that others had found this sufficiently satisfactory to be practical. A number of references were quoted in our first report[8]; but those of Fellows and Ordway[6,13,14,15,16] were particularly encouraging. These writers reported that their fluoroscopic examinations were 87 per cent in agreement with x-ray films which were considered to be 100 per cent accurate. The differential of 13 per cent between the accuracy of the fluoroscope and the x-ray does not discriminate too highly against the former as a practical method of examination particularly since any element of error is at least in part offset by the frequency with which examinations can be conducted.

In July, 1939, a new routine of survey for Eloise Hospital was inaugurated. A card system was set up showing the information which had already been gathered on each patient in the hospital as well as for those who had been discharged, paroled or who had died since the initial efforts were begun in 1935. This was a gigantic undertaking necessitating a search through each chart and a transcription on to each card of all chest x-ray reports found. Arrangements were made with the x-ray department that we receive copies of all current chest x-rays ordered by other physicians on the staff.

All changes taking place in the patient population are indicated. Cards on patients transferred, paroled or dead are placed in a special file. Temporary paroles are indicated in the active file by means of salmon-colored tab. With this system it was soon found that many patients who had been in the hospital for several years had never had any kind of special chest examination These, together with new admissions, were taken first for fluoroscopic examination. A similar file was set up for employees and those who had not had a previous chest x-ray were likewise selected for priority.

By the end of 1939 this first group of patients and employees was finished. We were then prepared to go through the entire institution again but this time the selection was based on the lapse of time since the last x-ray examination, those being selected first whose x-rays were the oldest. This work was completed by July, 1940, so that in one year all patients and employees had had either a chest x-ray, a fluoroscopic examination, or both. We are now firmly established in the system and it is with comparative ease that we can accomplish our ideal—a chest film or fluoroscopic examination at least once a year on each patient in the hospital.

The data kept on the cards must necessarily be kept in code. Detailed reports need not be kept in this file. We therefore devised a code for this work which has proved to be entirely satisfactory.

TABLE 4
CODE

1. *Negative*
2. *Insignificant*
   a. Ghon's
   b. Ghon's & Hilar Calcium
   c. Hilar Calcium
   d. Pleural Thickening
   e. Ghon's, Hilar Calcium & Pleural Thickening
   f. Pleural Thickening & Hilar Calcium
   g. Ghon's & Pleural Thickening
3. *Scars*
   a. Calcified foci (hematogenous)
   b. Calcified foci (nonhematogenous)
   c. Fibrous
   d. Thoracoplasty
   e. Unexpanded pneumothorax
4. *TBC Suspects*

5. *Positive TBC Without Cavitation*
   a. Exudative
   b. Fibroid
   c. Mixed
   d. Miliary
6. *Positive TBC With Cavitation*
   a. Exudative
   b. Fibroid
   c. Mixed
   d. Miliary
7. *Effusion*
   a. With pneumothorax
   b. Without pneumothorax
8. *Pneumonoconiosis*
   a. Without TBC
   b. With TBC
9. *Pneumonitis*
   a. Pneumonia (lobar)
   b. Bronchopneumonia
   c. Pneumonitis
   d. With empyema
10. *Bronchiectasis*
11. *Abscess*
    a. Without cavity
    b. With cavity
    c. Abscess scar
12. *Tumor*
    a. Lymphoma
    b. Carcinoma
    c. Aneurysm

Another feature which we deemed to be essential for this work is that the examiner be not aware of any previous examination on the patient he is examining. In this way each examination is unprejudiced and requires the examiner to exert his best efforts unbiased by any preconceived notions as to what he might be expected to see in the chest.

Therefore the cards bearing these data are not present in the fluoroscopic room. The patients, who are scheduled to appear in groups of from 30 to 50, are brought from their respective wards by attendants and the list of their names is in the possession of one of the attendants assisting the physician. This person has the sole duty of checking the identity of each patient examined and of noting the result of the examination opposite each name. Usually, the fluoroscopic examination is noted as being either positive or negative, but as one's skill increases, it becomes possible to risk an opinion as to the actual identity of the lesion visualized, viz., whether it be pleural or parenchymal, and if parenchymal, whether it be active or a scar and if the latter, whether it be fibrous or calcified. This is good exercise for the examiner but does not constitute a final opinion. We request x-ray follow-up on about 90 per cent of the patients who show any abnormality.

Routine rechecks are conducted either by means of the fluoroscope or x-ray. All patients with negative fluoroscopic and x-ray examinations are re-examined fluoroscopically as are those who have been found to have very minimal scars roentgenologically; frankly positive chests and those with significant scars are rechecked by x-ray. As has been said, fluoroscopic examinations are intended to be repeated at yearly intervals or less. X-ray rechecks of significant lesions are scheduled in a highly selective manner, the interval being chosen by the examiner at the time he views the films. It is usually from three months to one year.

Little trouble has been experienced in examining psychiatric patients—much less in fact than the examiner expected to encounter. Disturbed patients are not impossible to examine under moderate restraint. In a few cases mild sedation is employed. Those who are not ambulatory but who can come to the examining room by wheelchair are accommodated in the dark room on a specially constructed rolling chair with no back, which permits a free view of the chest. Patients who can travel only by ambulance are sent to x-ray.

In this way the following findings have accrued through December, 1940, after four and a half years of survey work, the last one and a half years of which were devoted to the fluoroscopic survey and its correlation with roentgen films when these were taken. At the present writing many patients who were in the hospital at the time the survey began have been examined twice and we are about to start on our third round of the institution.

Recall that when using tuberculin testing as a screen only 12 per cent of older patients in residence were excluded from the necessity of an x-ray. With the fluoroscope as screen 87 per cent were excluded from the necessity of an x-ray. This latter figure has been constant throughout the entire period thus far. This percentage of the fluoroscopic examinations was negative at the time of our first report,[8] which was in December, 1939, and it will be seen that approximately the same percentage is negative today.

in the fiscal year which ended June 30, 1939, we had admitted 44 patients to the Tuberculosis Service. In the year ending June 30, 1940, after one year of this survey, we had admitted 85 patients.

TABLE 5
SURVEY—PATIENTS
(X-ray)

Patients Examined			3015
Negative		2254	
Insignificant scar		130	
Significant scar		359	
Positive		272	
Total Negative Followed by Fluoroscopy			1265
Fluoroscopy negative		1222	
(One subsequently positive)			
Fluoroscopy positive		43	
X-ray negative	25		
X-ray positive	18		
Significant scarring	9		
Active tuberculosis	9		
Insignificant Scars Followed by Fluoroscopy			130
Negative fluoroscopically		98	
Positive fluoroscopically		32	

Of 3015 patients (this includes deaths, transfers and paroles up to the time this report was made in December, 1940) whose first examination was a chest film, 2384 were negative or showed insignificant scarring. Twelve hundred sixty-five of the negative chests were re-examined fluoroscopically (the others having left the hospital before this re-examination was done). The fluoroscopic examination was negative in 1222 of these people (and remember that the examiner did not know of the existence of a previous chest film at the time of his examination) which represents an accuracy of 96 per cent. Only one of these negative examinations has subsequently been found to be positive roentgenologically, the film having been taken due to symptoms arising which pointed to pulmonary disease.

In the 43 positive fluoroscopic examinations 25 proved to be negative roentgenologically. These were cases showing heavy bronchovascular markings in the upper lobe areas especially near the hilum of one or both sides —shadows which are at times extremely difficult to evaluate fluoroscopically, although continued experience should reduce the number of cases placed in this category. The remaining 18 positive cases were all significant, 9 cases of active tuberculosis being found.

All 130 of the patients with insignificant scars came to fluoroscopic re-examination. This modality detected the little lesions in 32 or 24.6 per cent of the cases. This correlation is considered to be good as the chests were essentially negative from the clinical standpoint.

All the fluoroscopic examinations just reported followed the previous roentgen film by an appreciable period of time, usually one to five years. In the second group, on patients whose first examination was fluoroscopic, we have a different type of correlation, the x-ray film following the fluoroscopic examination within a few weeks.

TABLE 6
SURVEY—PATIENTS
(FLUOROSCOPIC)

Initial Examination Fluoroscopy			2213
Negative			1939
No x-ray subsequently		1665	
X-ray negative		230	
X-ray positive		11	
Significant scars	9		
Active tuberculosis (5-6 months)	2		
Positive fluoroscopy on second examination		33	
X-ray negative	5		
X-ray significant scars	20		
X-ray active tuberculosis	8		
Initial Examination Fluoroscopy			
Positive			274
X-ray negative		79	
(45 fluoroscopies subsequently neg.)			
X-ray insignificant scar		6	
X-ray significant scars		140	
X-ray active tuberculosis		49	

In 2213 people examined fluoroscopically, 274 or 12.8 per cent were positive and these patients were sent immediately for x-ray. One hundred ninety-five or 71 per cent of these positive fluoroscopic examinations proved on x-ray to show pulmonary involvement of some degree. As our skill increased, 45 of the 79 patients who were negative to x-ray came up for a second fluoroscopic examination and these were then considered to be negative. If these 45 patients be removed from the positive group, the x-rays confirm

the fluoroscopic findings in 85 per cent of the examinations.

Since the purpose of this survey was to act as a screen for the selection of cases most in need of x-ray examination, we have made no attempt to check our negative cases by films; but in the normal course of hospital routine, a certain number of these patients has had films at the request of their psychiatrists. From the table, it is seen that 241 of the negative cases were so examined. The fluoroscopic findings were confirmed in 230 cases or 95 per cent. In 11 cases, significant lesions were uncovered by the x-ray, 2 of these being active tuberculosis. Whether these lesions were present at the time of the fluoroscopic examination five or six months before, or whether they developed in the interim cannot be said; but an examination of the 33 negative cases which were considered to be positive on second examination shows that reexamination is very likely to reveal lesions which may have been missed earlier or which may have developed subsequently. In 28 or 84 per cent of these cases the x-ray confirmed the presence of significant shadows.

TABLE 7
SURVEY—EMPLOYEES
(X-RAY)

Employees Examined		563
Negative	466	
Insignificant	47	
Significant scar	37	
Positive	13	
Total Negative Followed by Fluoroscopy		277
Fluoroscopy negative	276	
Fluoroscopy positive	1	
X-ray positive (significant scar) 1		
Insignificant Scars Followed by Fluoroscopy		47
Negative fluoroscopically	34	
Positive fluoroscopically	13	

The figures for the employees are susceptible to similar analysis, but here the record of the fluoroscope is much more impressive as regards the examination of chests already known to be negative roentgenologically. The fluoroscope was correct in 100 per cent of the cases. One chest previously found by x-ray to have been negative proved to be positive fluoroscopically and this case was confirmed by x-ray as being a significant scar. Insignificant scars found roentgenologically were detected by the fluoroscope in 13 of the 47 cases or 30 per cent which is entirely analagous with the experience found with the patients.

TABLE 8
SURVEY—EMPLOYEES
(Fluoroscopic)

Initial Examination Fluoroscopy			854
Negative		810	
No x-ray subsequently		763	
X-ray negative		39	
X-ray positive		4	
Significant scars	3		
Active tuberculosis	1		
Positive fluoroscopy on second examination		4	
X-ray significant scars	3		
X-ray active tuberculosis	1		
Positive		44	
X-ray negative		11	
X-ray significant scars		31	
X-ray active tuberculosis		2	

When using the fluoroscope as a screen, less than half the percentage incidence of positivity is found among the employees as among the patients (Table 8). Forty-four of 854 cases were so designated, an incidence of only 5.1 per cent. Seventy-five per cent of the positive fluoroscopies were confirmed by x-ray, 2 cases of active tuberculosis being found.

Among 810 fluoroscopically negative employees, 43 subsequently had x-rays for one reason or another and the fluoroscopic findings were confirmed in 90.7 per cent of th cases. The one case of active tuberculosis picked up among the employees by x-ray may actually have been missed fluoroscopically but, as was the case with the patients mentioned earlier, we cannot be sure that the lesions did not develop subsequent to the fluoroscopic examination.

From the table it is seen that 4 employees whose chests were negative at the initial fluoroscopy were considered to be positive on the second fluoroscopic examination, and all of these were confirmed by x-ray, one case of active tuberculosis being discovered.

The analysis of figures such as these does not reveal readily the fine shades of distinction which are made by the examiner in his interpretation of the shadows seen on the

fluoroscopic screen. In our earlier work, the chests were classified as positive or negative, these designations being used to indicate that x-ray follow-up was or was not requested. Thus a "negative" chest might be one in which a very minimal and highly discrete lesion was observed but in which x-ray recheck was not deemed to be required. In similar fashion, a "positive" chest might be one in which heavy peri-hilar markings were recognized as being most probably non-specific but in which it was deemed safer to have at least one x-ray examination in confirmation. The impersonal breakdown of figures would result in the cases belonging to the first example being catalogued as negative fluoroscopic examinations followed by positive x-rays. Those in the second example would appear as positive fluoroscopies followed by negative x-rays. In our later work, we have come to record the shadows seen on the screen in such a way as to allow of a greater nicety in the subsequent correlation of these observations with any films which may be taken.

It would be an absurdity to suggest that the fluoroscopic examination could equal the x-ray in accuracy. The obvious sources of error with the fluoroscope consist in its inability through lack of sensitivity to bring minor densities into sufficient relief for observation, to differentiate between specific and non-specific lesions and to dissociate superimposed shadows such as those of the clavicle and the first rib, which may easily hide a minimal tuberculous lesion Sources of error which may be avoided lie in insufficient accommodation of the examiner's eyes (he should have preferably twenty minutes of dark adaptation), too cursory an examination of the chest and failure to take advantage of screen lag, to throw the scapulas out of the field and to study questionable lesions by gentle rotation of the patient or in the posterior-anterior position as well as the anterior-posterior.

Summary

In this study, we believe it has been demonstrated again that the fluoroscope is a practical modality for the detection of pulmonary tuberculosis. In 4786 patients and employees examined by this method, 324 cases of significant pulmonary lesions were found and only 16 significant lesions are known to have been missed. Since only 4 of these latter were obviously acute tuberculosis and since they might well have developed *after* the "missed" fluoroscopy, we submit that this method of screening is superior to all others in cost, speed, accuracy and convenience.

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Psychological Warfare*

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Now, as the end of the present global conflict appears nearer and military victory seems within our grasp, the problems of peace confront us with increasing vividness. Danger has a unifying effect, but when it passes, conflicting interests of various groups return to the foreground. In such a situation a clear definition of the aims for which we are fighting is of great importance. These war aims, or better to say peace aims, must be realistic but at the same time suitable for creating enthusiasm in the people. They should also be acceptable not only to the divergent groups within our nation but acceptable also to our allies.

In the face of the increasing destructiveness and costliness of war, the most obvious peace aim would appear to be the establishment of a durable peace. Parliamentary principles of negotiation and compromise instead of violence must be introduced into international relations. This is exactly the aim which became discredited by the failure of the League of Nations. Its revival provokes both empirical and theoretical arguments which try to prove its utopian nature. One argument is of historical nature: there has always been war and therefore there will always be war. However, history is the science of singular occurrences and events never repeat themselves precisely. Our present technical mastery of time and space make this war possible on a global scale. The same technical achievements which make global war possible can make international peace possible. The same weapons which are used today for destruction on a global scale can be used for upholding international peace. This was clearly recognized by the aggressor nations. Both Hitler and the Japanese leaders were aiming openly for world conquest to be followed by a dictated peace. Naturally their world peace would have been a different world peace than the one which the Allied nations would impose. However, they recognized that on account of the advanced war technology, a durable peace could be established by disarming their opponents. Fortunately, our leaders took this threat of world conquest by the aggressors as a realistic possibility. They were correct in refuting the short-sighted isolationists who tried to laugh off this threat as a nightmare or as propaganda of the warmongers. If our leaders remain consistent, they must see that our victory can be used for insuring a durable peace which must be defended by the democratic nations against violators.

The psychological argument is that durable peace is impossible on account of the innate destructiveness of human nature. However, aggressiveness varies in different nations and also in different historical periods in the history of the same nation. Both peace and war are compatible with human nature. Periods of relative peacefulness cannot be attributed to a temporary disappearance of basic emotional forces in human nature. They must therefore be due to occasional relaxation of tension because of lack of external provocation. The significant question is: What are those specific conditions under which nations seek recourse to war to settle their controversies? Within national boundaries disputes are not settled by violence but by negotiation and law.

Neither history nor psychology contradicts the possibility of a durable peace. Man is aggressive but war is not the only outlet for aggression. Moreover, human aggressiveness can become mitigated by the methods of upbringing in the home, nursery, and schools. Parliamentary methods can replace violence not only within a nation but also in international relationships. It would be utopian to expect this parliamentary method to function from the beginning without enforcement by arms. We shall have to reckon with a congress of nations of divergent cultural traditions. We cannot expect to force upon them our own cultural outlook by decree. There is only one thing we can and must enforce and that is to prohibit private settlement of conflicting interests by war. War must be dealt

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with by international law as murder is dealt with by the laws of a nation. The internal conduct of political life is the private affair of the nation provided it does not violate the minimum standards of human decency. War, however, concerns not one but at least two nations and as it is today, all nations of the globe. The ultimate goal should be a democratic federation of nations because whenever conflicting interests are not settled by free expression, negotiation and compromise, particularistic tendencies sooner or later revive their early autonomous strength and act disruptively. In the beginning, however, the decisions of this international parliament will have to be upheld by the help of an international armed force which for a long time to come will have to remain under the control of the democratic nations until, through slow educational infiltration, the spirit of compromise and a respect for the dignity of man shall become organically assimilated by the members of all nations.

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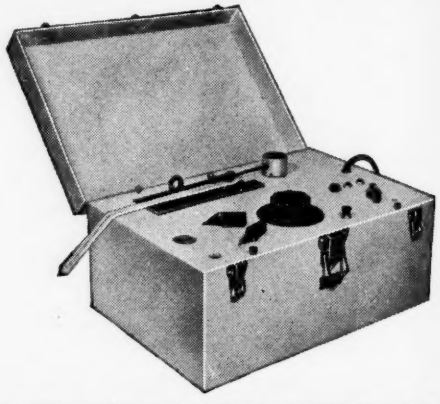

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